

EXHIBIT 21



Expert Rebuttal Report of Robert L. Klein

**Rebuttal Expert Report Replying to the Reports of Dr. Michael
J. Stern and Dr. Darius Lakdawalla**

August 1, 2025

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Credentials of Robert L. Klein and Qualifications as an Expert

1. I am Robert L. Klein, Chairman Emeritus and Co-Founder of Applied Marketing Science, Inc. (“AMS”), a market research and consulting firm with offices in Burlington, Massachusetts. My credentials, curriculum vitae, and compensation in this matter are set forth in my opening report in this case (titled “Social Media and Teacher Time Survey Methodology and Results” and dated May 18, 2025) and are unchanged.

Background and Assignment

2. In my opening report, I described the survey I conducted among Charleston County School District middle school and high school teachers that measured the amount of their scheduled classroom instruction time that had been diverted due to the use of Defendants’ social media platforms by their students. I found that over the period from 2014 to the present, both middle and high school teachers combined reported a significant increase in the amount of their scheduled instruction time diverted due to student use of Defendants’ social media platforms.¹
3. I have been provided with two expert reports (hereafter “Rebuttal Reports”) submitted by defendants that refer to my report. These include reports by Dr. Michael J. Stern (the “Stern Report”) and Dr. Darius Lakdawalla (the “Lakdawalla Report”).
4. I have been asked by counsel for Plaintiffs to respond to the issues raised in the Rebuttal Reports. My lack of response to any specific issue should not be interpreted as agreement. My work is on-going. Should additional data become available I may revise or extend my opinion.

Summary of Opinion

5. None of the authors of the Rebuttal Reports conducted any survey or presented any actual data relevant to the amount of instruction time diverted due to student use of social media. Their criticisms of my survey methodology and results consist of speculation and conjecture, and they offer no suggestions as to how, in their opinion, relevant data might have been collected. None of the Rebuttal Reports cause me to change my opinions concerning the increase in the amount of scheduled instruction time diverted due to student use of Defendants’ social media platforms. In the

¹ Social Media and Teacher Time Survey Methodology and Results for Charleston County School District, p. 12, ¶42.

sections that follow I will respond to the Rebuttal Reports pertaining to Charleston County School District.

Description of the Stern Report

6. The Stern Report describes six opinions regarding my social media and teacher time survey (“Klein Survey”), which I describe and respond to below. For the reasons discussed in the sections that follow, I disagree with each of Stern’s opinions.

Response to the Stern Report

Response to Stern Report Opinion 1: My Survey Design Is Sound

7. The Stern Report complains that asking teachers about past student behavior in their classrooms (i.e., retrospective reporting) results in unreliable answers. Based on my extensive experience in market research spanning decades, I disagree. Retrospective reporting is the proper methodological approach in this case. Retrospective reporting has been a standard market research tool for decades. For instance, it is standard in market research to ask survey respondents what they have purchased previously and their opinions about those purchases, including changes in purchase behavior over time. And it is standard practice for companies to use that information to make critical marketing decisions.²
8. Indeed, the format of the questions in the Klein Survey are closely aligned with the concept of an “event history calendar”³ that ties the response to significant past events. This is discussed in “Improving Retrospective Reports in Surveys: Advances in the Use of Event History Calendars and Cognitive Interviewing” which is cited in the Stern Report. Just as everyone (over 30) knows where they were on September 11, 2001, the closing of schools and the lockdown due to the Covid-19 pandemic in 2020 provides a memorable anchor in time for the estimates reported in the Klein Survey. The Klein Survey begins with the current school year as a reference point and then asks about other significant past dates (e.g., the Covid-19 lockdown which would be particularly memorable for teachers who experienced both the transition to remote learning and the return from remote learning). The use of recent history, significant calendar events, and the formatting of the question itself (i.e., asking the respondent to enter the time disrupted by social media for different time periods in the same question on the same page and including their previous answer for the current academic year on that same page) facilitates respondents’ recall, ultimately

² Green, Paul and Tull, Donald, *Research for Marketing Decisions*, Prentice-Hall, Inc. 1966, p.121.

³ Belli, R.F. (2021). Improving retrospective reports in surveys: Advances in the use of event history calendars and cognitive interviewing. *Field Methods*, 33(2), 131-146.

allowing for reliable respondent answers. The question does not broadly ask respondents to provide every minute of their working day since they started teaching. It instead anchors respondents to recent or significant points in time to facilitate recall. The question asks teachers whether diversions last year were more or less than this year and whether diversions last year were more or less than when in-person instruction resumed after COVID-19 school closures. The Stern Report fails to consider the wording of the actual recall questions asked of respondents which are anchored to significant past events. Moreover, survey respondents were instructed not to “guess” and were provided with a “Don’t know” check box which a respondent could easily click if they could not recall the requested information without guessing as instructed. This is a standard means of ensuring respondents do not provide incorrect responses.⁴ Additionally, teachers were specifically instructed to think about a typical day during that point in time to avoid any potential focus on outlier experiences. All these factors reinforce the reliability of the survey responses. Notably, Stern’s assertions that asking respondents not to guess is not effective are entirely unsupported and Stern ignores the existence of the “Don’t know” check box.⁵

9. In support of its criticism of the use of retrospective questions, the Stern Report describes two published studies of teacher time reporting that compare self-reported work hours (or student contact activities) using a diary versus a single retrospective question.⁶ The Stern Report notes that the results are slightly different but assumes the diary is accurate and that the retrospective question is flawed. No empirical support for this conclusion is provided and the Stern Report admits that there is a statistical correlation between the two measures. It is therefore unclear on what basis the Stern Report concludes that retrospective reporting is unreliable.
10. Further, as stated in the Klein Report, a pre-test of the survey (to be discussed below) confirmed that teachers understood the questions and were confident in their responses.⁷ During the pre-test, teachers did not express concern over an inability to recall the requested information. Having personally listened to many of these pre-test interviews, based on my substantial experience in survey design and having participated in hundreds of pre-test interviews during my career, I believe that teachers were comfortable answering the questions and that the calendar events used were memorable anchors which assisted respondents in providing accurate, reliable answers.

⁴ Diamond, S.S. (2011). Reference Guide on Survey Research. In Federal Judicial Center and The National Academies Press, Reference Manual on Scientific Evidence, p.390.

⁵ Expert Report of Dr. Michael J. Stern, p. 6.

⁶ *Id.*, p. 6.

⁷ Social Media and Teacher Time Survey Methodology and Results for Charleston County School District, p. 11, ¶39.

11. Last, the Stern Report accuses the Klein Survey of having nonresponse error and that “those who responded most likely felt more strongly about the topic than those who did not.”⁸ The Stern Report fails to understand that the methodology used for the Klein Survey specifically avoided this. . The invitation only told respondents they were receiving a survey “to understand the experiences and challenges faced by school personnel” and made no mention of social media.⁹ Because no solicitation of responses mentioned “social media usage” or made any reference to social media, it is impossible that a teacher’s feelings about social media usage influenced their decision regarding whether to respond or not. Moreover, Stern’s assertion that “[u]nfortunately, no data was collected regarding teacher’s feelings about social media usage . . .” makes no sense. The Klein Survey was designed to gather data on the amount of instruction time diverted due to student social media use *not* to gather information about teacher’s feelings about social media usage.

Response to Stern Report Opinion 2: My Survey Questions Were Not Ambiguous, Leading, or Speculative

12. The Stern Report wrongly states that “many questions are vague and ambiguous thus lacking the specificity to provide an even stimulus to all respondents.”¹⁰ It then fails to provide any specifics about this broad critique other than to question what constitutes “social media.” The Stern Report criticizes the Klein Survey stating, without support, that “for some people the term ‘social media’ may refer to a wide range of digital activities that could include gaming, texting, [and] checking email...”¹¹ I disagree with the criticism that the Klein Survey did not define “social media.” In fact, the key filter question (Q3) clearly identifies Facebook, Instagram, Snapchat, TikTok, and YouTube as being the social media platforms referred to in the survey and expressly distinguishes social media from texting apps such as iMessage and WhatsApp.¹² Thus, there is nothing ambiguous about what is meant by “social media” in the Klein Survey.
13. The Stern Report also criticizes the Klein Survey for “leading question wording” for “at least one pivotal question.”¹³ There is nothing leading about the Klein Survey question that asks about the repercussions of social media use. The Stern Report criticisms are themselves speculative (“could,” “might,” “may,” etc. are used by Stern throughout this section of the Stern Report), as they offer no specific reason and cite no support for the proposition that respondents were led to answer in a way that did

⁸ Expert Report of Dr. Michael J. Stern, p. 7.

⁹ Social Media and Teacher Time Survey Methodology and Results for Charleston County School District, Appendix C.

¹⁰ Expert Report of Dr. Michael J. Stern, p. 1.

¹¹ *Id.*, p. 1.

¹² Social Media and Teacher Time Survey Methodology and Results for Charleston County School District, p. 8, ¶30.

¹³ Expert Report of Dr. Michael, J. Stern, p. 7.

not reflect their true perceptions. The Stern Report also fails to suggest alternative wording to demonstrate how to avoid this supposed problem. The Stern Report states that the responses “reflect respondents’ perceptions,” which I agree with as that is exactly what the Klein Survey was designed to do.

14. The Stern Report contends that language used in part of question Q3 regarding repercussions from student social media use is both leading and speculative and “violates fundamental questionnaire design tenets.”¹⁴ I disagree. The question properly defines a phenomenon and specifically relates it to social media use. The question explicitly identified the issues teachers would encounter (i.e. student anxiety, inattentiveness, sleep deprivation, and peer conflicts) and linked them to social media and thus no speculation was required as Stern claims.
15. The Stern Report also asserts that “data produced by this question are not a valid or objective measure of anything empirical.”¹⁵ This argument is based on Stern’s false assertion that the survey contains leading questions. In truth, the questions in my survey are properly designed survey questions and appropriately gathered objective empirical data.

Response to Stern Report Opinion 3: Context Effects Did Not Skew Responses

16. The Stern Report states that the “decision to focus follow-up questions only on social media related disruptions gave those items undue weight in the analysis and conclusions.”¹⁶ However, the fact that only teachers who indicated that “unauthorized social media use during class” or “repercussions from social media use outside of the classroom” were asked follow-up questions in no way violated the double-blind nature of the survey. Respondents to the survey had no way of knowing while taking the survey that social media related questions were the focus.
17. The survey used a proper “funnel approach.” It is a best practice, within the funnel-shaped format, to employ filter questions, which are questions used to screen out respondents who do not have an opinion on the questions posed by the survey.¹⁷ Respondents were asked general questions about the time they spend in scheduled instruction time and then asked to select from a list, with distractors included, the factors, if any, that divert their time away from teaching. At that point, only respondents who indicated that either “unauthorized social media use during class” or “repercussions from social media use outside of the classroom” diverted from instruction time continued to be asked about how much time was diverted. With this proper funnel approach, no respondent is forced into providing the amount of time diverted by social media, rather, only those who have already indicated that social

¹⁴ *Id.*, p. 8.

¹⁵ *Id.*, p. 8.

¹⁶ *Id.*, p. 10.

¹⁷ Diamond, S.S. & Swann, J.B. (2022). Trademark and Deceptive Advertising Surveys: Law, Science, and Design 2nd ed., American Bar Association, Section of Intellectual Property Law, p. 219.

media use and/or its repercussions are factors that divert time (amongst others), have a relevant opinion and are asked about how much time was diverted. Additionally, even at this point, respondents would not know if they would be asked about any other diversions selected and were unaware that the survey would terminate if they did not select social media related factors. Given that respondents would not know that the survey would terminate if they did not select the social media related factors, the Stern Report's criticism of the "sequence of topics" as favoring social media is unfounded.

18. The notion that because "social media" was mentioned twice in the list of nine possible causes of diversion from instructional time teachers were somehow "primed"¹⁸ to think about the social media issues is also unfounded. The order in which the list of possible causes was displayed was randomized and this was the first place in the survey that there was any mention of social media.
19. The Stern Report also criticizes the Klein Survey for excluding data on other disruptions and asserts that this results in an "apples-to-oranges comparison."¹⁹ This critique is confounding. The Stern Report ignores that the survey was designed to gather information regarding the impact of social media on teachers' time. Accordingly, there was no reason to collect data on other disruptions experienced by teachers. Moreover, I am not making comparisons in my conclusions regarding the Klein Survey data, which are focused only on disruption to instruction time due to student social media use.

Response to Stern Report Opinion 4: My Pretesting Was Adequate

20. The Stern Report states that "[i]n my professional opinion, the pretesting as conducted was insufficient to guarantee the survey's quality."²⁰ However, this criticism reflects a misunderstanding of the manner and extent of the pre-testing.
21. The Stern Report erroneously states that pre-tests were done in a different mode (via phone) than how the survey was actually conducted (web questionnaire).²¹ This is incorrect. During pre-testing, non-Charleston teachers who would otherwise qualify for the survey were sent the programmed online version of the survey which they completed just as they would had they been Charleston teachers. The interviewer asked the respondent questions *after* they had responded to the programmed online questionnaire. This is a common method of pre-testing that I have used throughout my career. As such, pretest respondents viewed the questions in the web questionnaire in the same manner that the questions were viewed by the Charleston teachers. Therefore, the criticism that the "adequacy of the pretest results" is in question is unfounded.

¹⁸ Expert Report of Dr. Michael J. Stern, p. 10.

¹⁹ *Id.*, p. 10.

²⁰ *Id.*, p. 12.

²¹ *Id.*, p. 11.

22. The Stern Report also calls into question the rigor of the cognitive interviewing done in the pre-tests.²² However, the pre-tests conducted followed the guidelines that Dr. Stern himself points to, such as, but not exclusively, asking respondents to “explain how they arrived at an answer,”²³ whether respondents “interpreted [the] question as intended,”²⁴ and conducting the interview in “the mode in which the survey will be delivered in the actual study,”²⁵ which was described above.
23. Furthermore, as the Stern Report points out, “cognitive interviews should have been conducted with respondents taking the web survey as the researcher observed and probed them.”²⁶ But this is not a criticism, as this is how AMS conducted these interviews.
24. Additionally, the Stern Report opines that pre-test respondents should be “representative of the target population.”²⁷ The pre-tests were conducted on middle school and high school teachers that had varying experience levels and taught a variety of subjects which is the same as the respondents to the Charleston survey. And any issues that were identified were dealt with as they occurred and it is incorrect to imply that there was only one round of pre-tests.²⁸
25. As I stated in my initial report, “I personally listened to many of these interviews and am confident that the teachers understood the questions and were able to provide accurate responses.”²⁹

Response to Stern Report Opinion 5: Pattern of Increase in Time Diverted

26. The Stern Report complains that there was no statistical analysis undertaken to support the statement in the Klein Report of “a significant increase in the time diverted” due to student use of social media. However, simple inspection of the results for middle and high school teachers combined in Charleston clearly show that over the past 10 years, teacher reports of time diverted from instruction due to social media has increased. And a similar pattern exists for the over 2,400 teachers surveyed across twelve school districts.
27. The Stern Report also states that “[e]ven if the data did show a pattern of more minutes lost now than ten years ago (within the confines of what teachers recalled),

²² *Id.*, p. 11.

²³ Bradburn, N. M., Sudman, S., & Wansink, B. (2004). *Asking questions: The definitive guide to questionnaire design – for market research, political polls, and social and health questionnaires* (Rev. ed.).

²⁴ Expert Report of Dr. Michael J. Stern, p. 11.

²⁵ *Id.*, p. 12.

²⁶ *Id.*, p. 12.

²⁷ *Id.*, p. 12.

²⁸ *Id.*, p. 12.

²⁹ Social Media and Teacher Time Survey Methodology and Results for Charleston County School District, ¶39.

attributing that change specifically to ‘Defendants’ social media platforms’ is unsound”³⁰ given that “[t]here was no control or comparison for other factors that changed in the last ten years.”³¹ However, as the Stern Report itself notes, the Klein Survey “acknowledged multiple categories of disruption”³² but asked the respondents to focus specifically on time diverted from instruction due to “unauthorized student use of social media (e.g., Facebook, Instagram, Snapchat, TikTok, YouTube, etc.) during class” or “repercussions from student use of social media (e.g., Facebook, Instagram, Snapchat, TikTok, YouTube, etc.) outside of the classroom” if they had selected that one or both of these diverted time away from instruction. As such, respondents’ answers were specifically about time diverted due to social media use and it was therefore possible to draw conclusions from the data generated from the Klein Survey regarding the amount of time diverted due to social media use. Additionally, while pre-testing the questionnaire, it was found that teachers were able to discern whether a diversion of classroom time occurs due to social media or repercussions from social media use specifically.

28. The Stern Report also asserts that a comparison was necessary.³³ This argument misunderstands that the survey was not designed to compare the amount of classroom time diverted by different sources of distraction, but rather, to measure the amount of instruction time diverted due to student social media use. Therefore, the survey appropriately gathered information focused on classroom time diverted due to student social media use which is the only subject being measured in the Klein Survey and the only issue on which I opined.

Response to Stern Report Opinion 6: Unsupported Assertions Regarding Cell Phone Bans

29. The Stern Report offers a sixth opinion that the Klein Survey data illustrates that instituting cell phone bans results in a drop in problematic behaviors.³⁴ But there is no data in the Klein Survey regarding cell phone bans in Charleston (or anywhere else) so the proposition that Klein Survey data can be used to reach conclusions regarding cell phone bans is unsupported. Moreover, the Stern Report fails to define what is meant by “cell phone bans” as this phrase could constitute many things.

Description of the Lakdawalla Report

30. The Lakdawalla Report describes four unfounded opinions of the Klein Survey. Specifically those four opinions are: 1) The Klein Survey requires respondents to make implicit judgments about whether behavior is or is not related to social media;

³⁰ Expert Report of Dr. Michael J. Stern, p. 13.

³¹ *Id.*, p. 13.

³² *Id.*, p. 13.

³³ *Id.*, p. 13.

³⁴ *Id.*, p. 2.

2) The Klein Survey is susceptible to recall failure; 3) The Klein Survey relies on a very small number of respondents; and 4) The Klein Survey provides no evidence that the small fraction of teachers in the Charleston County School District that responded are representative of the district's teachers.³⁵ I will address each of these opinions in the sections that follow.

Response to the Lakdawalla Report

31. The Lakdawalla Report claims that the Klein Survey did not "isolate...the effects of the at-issue conduct."³⁶ However, the objective of the Klein Survey was to calculate the instruction time diverted due to student use of Defendants' social media platforms. This objective was achieved. My understanding is that the issue in this litigation concerns the impact of social media, including student social media use, on school districts and, thus, Lakdawalla's assertions that I do not measure the at-issue conduct is unfounded.
32. The Lakdawalla Report criticizes the Klein Survey, stating that it "requires respondents to make implicit judgments about whether behavior is or is not related to social media."³⁷ Specifically, it implies that teachers must be able to personally observe student use of social media to assess the relationship between the use of social media and the diversion of classroom time, and that there was no evidence provided to support the accuracy of respondents' judgments. As previously noted, and included in the initial report, the questionnaire was explicitly pre-tested to ensure that respondents could accurately respond to the questions asked, that the questions were clear, and that vocabulary used was understood by the relevant population, which is customarily addressed during this pre-test stage.³⁸ This contradicts the claim that no evidence was provided to support the accuracy of respondents' judgments. Specifically, while pre-testing the questionnaire, it was found that teachers had no difficulty distinguishing between social media use and gaming, texting, and other computer/phone-based activities. Teachers are in fact able to assess the relationship between the use of social media and the diversion of classroom time without personally observing each student's use of social media.
33. The Lakdawalla Report makes the same point as the Stern Report regarding the retrospective nature of the Klein Survey, and that it is susceptible to recall failure.³⁹ As such, I have previously addressed it above, and my response is the same.

³⁵ Expert Report of Dr. Darius Lakdawalla, pp. 116 – pp. 120.

³⁶ *Id.*, p. 114.

³⁷ *Id.*, p. 117.

³⁸ Diamond, S.S. & Swann, J.B. (2022). Trademark and Deceptive Advertising Surveys: Law, Science, and Design. 2nd ed., American Bar Association, Section of Intellectual Property Law, pp.20-21.

³⁹ Expert Report of Dr. Darius Lakdawalla, p. 116.

Specifically, the Klein Survey used standard market research methodology, the Klein Survey anchored respondents on memorable events to aide recall, and the Klein Survey was pre-tested to ensure respondents were able to provide accurate responses.

34. Finally, the Lakdawalla Report criticizes the Klein Survey for having a small sample size and not providing evidence that the sample is representative. The Lakdawalla Report points out that “smaller samples produce less precise estimates than larger samples do.”⁴⁰ This statement fails to recognize that there is no reason to believe that the responses from teachers in Charleston are inaccurate or biased. As I described above and in my initial report, a complete list of teachers currently in Charleston was obtained from the school district and an email was sent inviting teachers to take the survey, without identifying that the survey was about social media..⁴¹ Based on my extensive experience in market research, the actual response rate for the survey is comparable to what I have observed and what I typically see for surveys sent to customer email lists when no cash or other incentive is offered. Courts have routinely accepted response rates similar to those observed among Charleston teachers.⁴² The Lakdawalla Report cites to the Reference Manual on Scientific Evidence’s definition of non-response bias; however, closer examination of the chapter on Survey Research explains, “surprisingly comparable results have been obtained in many surveys with varying response rates, suggesting that surveys may achieve reasonable estimates even with relatively low response rates. The key is whether nonresponse is associated with systematic differences in response that cannot be adequately modeled or assessed.”⁴³ As explained, there is no reason to believe that those who did not respond to the survey were in any way systematically different than those who did, as the solicitation of responses did not inform potential respondents that the survey related to social media. As such, respondents’ perspectives on social media could not have influenced their decision regarding whether they chose to respond to the survey.

⁴⁰ Expert Report of Dr. Darius Lakdawalla, p. 119.

⁴¹ Social Media and Teacher Time Survey Methodology and Results for Charleston County School District, ¶ 20; Appendix C.

⁴² For examples of Klein surveys that have been accepted by courts with similar response rates see: *Monster Energy Company v BeastUp LLC* (Case No. 2:17-at-00784, ED of California) – 2.4%; *In the matter of Certain Footwear Products* (ITC Investigation No. 337-TA-936) – 5.0% and 4.2%; *vonRosenberg et al. and The Episcopal Church v Lawrence et al.* (Case No. 2:13-cv-00587, South Carolina, Charleston Division) – 5%.

⁴³ Diamond, S.S. (2011). Reference Guide on Survey Research. In Federal Judicial Center and The National Academies Press, Reference Manual on Scientific Evidence, p. 385.

Conclusion

35. There is nothing in any of the Rebuttal Reports that causes me to change my opinion concerning the time diverted from teaching due to the use of social media by Charleston middle and high school students as outlined in my initial report.

A handwritten signature in black ink that reads "Robert L. Klein". The signature is written in a cursive, slightly slanted style.

Robert L. Klein

Appendices

A. Documents Reviewed and Considered

Appendix A: Documents Reviewed and Considered

Belli, R.F. (2021). Improving retrospective reports in surveys: Advances in the use of event history calendars and cognitive interviewing. *Field Methods*, 33(2), 131-146.

Bradburn, N. M., Sudman, S., & Wansink, B. (2004). *Asking questions: The definitive guide to questionnaire design – for market research, political polls, and social and health questionnaires* (Rev. ed.).

Diamond, S.S. (2011). Reference Guide on Survey Research. In Federal Judicial Center and The National Academies Press, Reference Manual on Scientific Evidence.

Diamond, S.S. & Swann, J.B. (2022). Trademark and Deceptive Advertising Surveys: Law, Science, and Design 2nd ed., American Bar Association, Section of Intellectual Property Law.

Expert Report of Dr. Darius Lakdawalla (07/11/2025).

Expert Report of Dr. Michael J. Stern (07/11/2025).

Expert Report of Robert L. Klein. Social Media and Teacher Time Survey Methodology and Results for Charleston County School District (05/18/2025).

Green, Paul and Tull, Donald, *Research for Marketing Decisions*, Prentice-Hall, Inc. 1966.